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Estimate of Loss to Bond Issuers from Exercise of Survivor's Options

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Introduction

The United States Attorney's Office of the District of Rhode Island (USARI) has requested Andrew Kalotay Associates (AKA) to estimate losses to corporations that issued bonds containing so-called survivor's options, arising from the exercise of these options by a certain Joseph Caramadre and his associates (JC, et al.).

We have been advised by the USARI that JC, et al. opened joint accounts with terminally ill individuals. When these individuals passed away, JC et al. promptly put the bonds back to the issuing corporations at face value. Consequently, the issuing corporation suffered losses from having to pay full face value for a liability that may have been worth significantly less.

By way of relevant expertise to this engagement, Andrew Kalotay is a leading authority on the valuation of bonds with options. AKA has been providing high-speed, high-accuracy fixed income analytics to major market participants since 1990, and advises two government-sponsored enterprises (GSE) on the issuance of bonds in general including those with survivor's options. Dr. Kalotay's bio is provided for reference as Appendix A.

What is a Survivor's Option?

The survivor's option or estate put, is a feature of many investment-grade bonds. These bonds are aimed at retail investors because the provision allows the estate of a deceased investor to put back the bond at par to the issuer. The survivor's option obviously has no value to institutional investors.

The survivor's option idea has been around for several decades. It goes back to the time when the U.S. Treasury issued Estate Tax Anticipation Bonds. Known colloquially as "flower bonds," they had the novel feature that, regardless of their market value, the IRS would accept them at par if used to pay the estate taxes of a deceased holder. The last flower bonds matured in 1998.

Bonds with survivor's option are usually callable — the issuer has the right to redeem the bonds priority to maturity at par. When interest rates decline the value of the bonds increase and the ability to redeem them at par becomes valuable.

On the other hand, when interest rates rise, the value of the bonds decrease. The survivor's option provides insurance to the estate of the holder in that it has the ability to put back the bonds at face value even if they are worth much less.

Determining the Loss to Issuers

The main challenge in estimating the loss to issuers is determining what the values of the bonds were (in terms of their replacement cost) at the time the survivor's options were exercised by JC, et al. These values depend on the issuer's prevailing borrowing cost because that is how the issuer has to raise the funds required to pay off the bond holder. The issuer's borrowing cost is represented by its funding curve (the rates at which it issues bonds for various maturities). The valuation has to take into account other factors, such as the embedded call options and survivor's options, which also depends on the volatility of interest rates.

Without getting into technical details, these inputs together with the terms of the bonds are sufficient to produce a fair value estimate using AKA's patented Survivor's Option Bond Calculator.

Issuer's Funding Curve

Although a sophisticated issuer would know its current funding curve with a high degree of precision, determining historical funding rates as of particular option exercise dates presents some difficulties. In addition, some of the transactions took place when borrowing spreads¹ were quite volatile in the wake of the financial crisis of 2008.

As a substitute, we gleaned the needed spread information from a combination of investment grade and speculative grade spread indexes for the period, provided by Standard & Poors. These spreads were added to Treasury rates prevailing on the transaction dates.

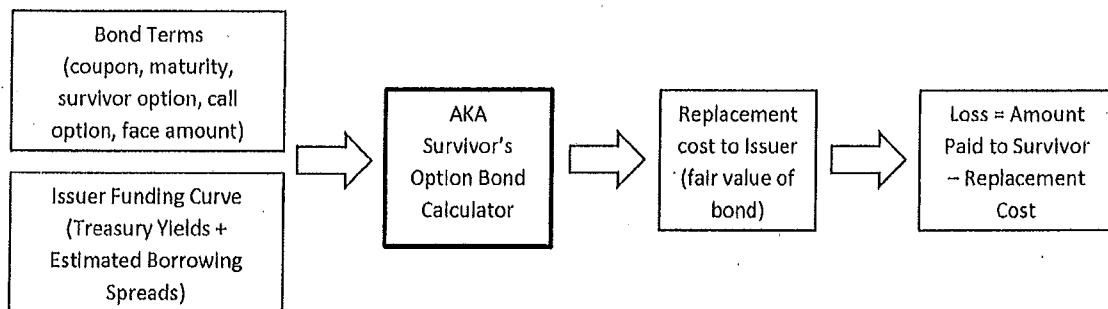
Data Collection and Loss Calculation

The transaction data, transcribed from the brokerage statements of JC et al. into Excel spreadsheets, were provided to us by IRS Agent Troy Niro. From the data, we were able to determine which transactions involved survivor's option puts.

¹ The extra yield over Treasury yields that a borrower would expect to pay, given its creditworthiness, when issuing bonds.

For such cases, we retrieved the associated bond terms from Bloomberg. This was also our source for the Treasury rates prevailing on the dates the bonds were put back to the issuer. We then added spread information extracted from the credit spread indices provided by Standard and Poor's in order to estimate the issuer's funding yield curve on each survivor put transaction date.

The loss calculation process for each transaction can be represented diagrammatically as follows:



Loss Calculation Results

Using the above methodology and data, we estimate that the loss to issuers arising from exercise of survivor's put options by JC et al. amounts to \$12.48 million. Table 1 below breaks down the loss by issuers. Three issuers, General Motors Acceptance Corp, Countrywide Financial, and CIT Group, together account for \$9.84 million of the loss sustained by issuers as a whole.

Table 2 displays the loss to issuers by account holder. Joseph Caramadre and associates are shown as joint account holders.